

(a) an ability to produce xylitol or D-xylulose from glucose;

(b) quinone type: ubiquinone-10;

(c) GC content of DNA: about 56 to 57%;

(d) a weak ability to produce acetic acid from ethanol; and

(e) grows in the presence of 30% glucose.

18. (New) A method for producing xylitol or D-xylulose, which comprises:

culturing a bacterium belonging to the genus *Asaia* which has an ability to produce xylitol or D-xylulose from glucose in a suitable medium to accumulate xylitol or D-xylulose in the medium, and

collecting xylitol or D-xylulose from the medium.

19. (New) The method according to Claim 18, wherein the bacterium belongs to *Asaia ethanolifaciens*.

20. (New) The method according to Claim 19, wherein the bacterium has a 16S rRNA gene comprising the nucleotide sequence of SEQ ID NO: 1.

21. (New) A method for producing xylitol or D-xylulose, which comprises:

culturing a bacterium having an ability to produce xylitol or D-xylulose from glucose in a suitable medium to accumulate xylitol or D-xylulose in the medium, and

collecting xylitol or D-xylulose from the medium,

wherein the bacterium belongs to the family *Acetobacteraceae*, which is located between *Gluconobacter oxydans* subsp. *Oxydans* and *Acetobacter aceti* as determined by comparison of the 16S rRNA gene nucleotide sequences of *Gluconobacter oxydans* subsp. *oxydans* and *Acetobacter aceti* using molecular taxonomic analysis.

22. (New) A method for producing xylitol or D-xylulose, which comprises:
culturing a bacterium having an ability to produce xylitol or D-xylulose from glucose
in a suitable medium to accumulate xylitol or D-xylulose in the medium, and
collecting xylitol or D-xylulose from the medium.

wherein the bacterium an isolated microbial strain belonging to the family
Acetobacteracea, which has the following characteristics:

- (a) an ability to produce xylitol or D-xylulose from glucose;
- (b) quinone type: ubiquinone-10;
- (c) GC content of DNA: about 52 to 53%;
- (d) a weak ability to produce acetic acid from ethanol; and
- (e) grows in the presence of 30% glucose.

23. (New) A method for producing xylitol or D-xylulose, which comprises:
culturing a bacterium belonging to the genus *zucharibacter* which has an ability to
produce xylitol or D-xylulose from glucose in a suitable medium to accumulate xylitol or D-
xylulose from the medium, and

collecting xylitol or D-xylulose from the medium.

24. (New) The method according to Claim 23, wherein the bacterium belongs to
Zucharibacter floricola.

25. (New) The method according to Claim 24, wherein the bacterium has a 16S
rRNA gene comprising the nucleotide sequence of any one of SEQ ID Nos: 2, 3, 4 or 5.--